WHAT IS CLAIMED IS:

1. A method of processing data packets comprising:

determining an actual arrival rate of data packets and a number of data packets stored in a queue; and

initiating transmission of data packets in the queue based on the actual arrival rate and the number of data packets in the queue.

2. The method of claim 1 including receiving the data packets from a program; and transmitting the data packets to a device.

3. The method of claim 1 including receiving the data packets from a device; and transmitting the data packets to a program.

4. The method of claim 1 wherein transmitting the data packets in the queue includes transmitting at least one burst of data packets, wherein each burst contains a number of data packets sufficient to maximize throughput.

5. The method of claim 1 further including storing a data packet in the queue if the actual arrival rate is less then the first threshold value, and scheduling a future interrupt event to cause processing of data packets from the queue.

6. The method of claim 1 further including comparing the actual arrival rate of data packets to a first threshold.

7. The method of claim 6 further including transmitting a data packet without storing the data packet in the queue, if the actual arrival rate is greater then the first threshold value.

8. The method of claim 6 wherein the actual arrival rate is based on a weighted average of time intervals between a predetermined number of previous data packets and the first threshold value corresponds to a predetermined arrival rate.

9. The method of claim 1 further including comparing the number of data packets to a second threshold.

10. The method of claim 9 wherein the second threshold value represents a number of unprocessed data packets.

11. An article comprising a computer-readable medium that stores computer-executable instructions for causing a computer system to:

determine an actual arrival rate of data packets and a number of data packets stored in a queue; and

initiate transmission of data packets in the queue based on the actual arrival rate and the number of data packets in the queue.

12. The article of claim 11 including receiving the data packets from a program; and transmitting the data packets to a device.

13. The article of claim 11 including receiving the data packets from a device; and transmitting the data packets to a program.

14. The article of claim 11 wherein transmitting the data packets in the queue includes transmitting at least one burst of data packets, where each burst contains a number of data packets sufficient to maximize throughput.

15. The article of claim 11 further including instructions to store a data packet in the queue if the actual arrival rate is less then the first threshold value, and scheduling a future interrupt event to cause processing of data packets from the queue.

16. The article of claim 11 further including instructions to compare the actual arrival rate of data packets to a first threshold, wherein the actual arrival rate is based on a weighted average of time intervals between a predetermined number of previous data packets, and wherein the first threshold value corresponds to a predetermined arrival rate.

17. The article of claim 16 further including instructions to transmit a data packet without storing the data packet in the queue, if the actual arrival rate is greater then the first threshold value.

18. The article of claim 11 further including instructions to compare the number of data packets to a second threshold,

wherein the second threshold value represents a number of unprocessed data packets.

19. A data packet processing device comprising:

a source of data packets;

a destination of data packets; and

a data packet processing engine, configured to determine an actual arrival rate of data packets and a number of data packets stored in a queue and initiate transmission of data packets in the queue based on the actual arrival rate and the number of data packets in the queue.

20. The device of claim 19 wherein the processing engine is configured to transmit the data packets in the queue includes transmitting at least one burst of data packets, where each burst contains a number of data packets sufficient to maximize throughput.

21. The device of claim 19 further including storing a data packet in the queue if the actual arrival rate is less then the first threshold value, and scheduling a future interrupt event to cause processing of data packets from the queue.

22. The device of claim 19 further including comparing the actual arrival rate of data packets to a first threshold, wherein the actual arrival rate is based on a weighted average of time intervals between a predetermined number of previous data packets, and wherein the first threshold value corresponds to a predetermined arrival rate.

23. The device of claim 22 further including transmitting a data packet without storing the data packet in the queue, if the actual arrival rate is greater then the first threshold value.

24. The device of claim 19 further including comparing the number of data packets to a second threshold, wherein the second threshold value represents a number of unprocessed data packets.

25. A computer network system comprising:

an input device for receiving data packets from the network;

an output device for transmitting data packets to the netwok;

wherein each device includes a data packet processing engine configured to determine an actual arrival rate of data packets and a number of data packets stored in a queue and initiate transmission of data packets in the queue based on the actual arrival rate and the number of data packets in the queue.

26. The system of claim 25 wherein transmitting the data packets in the queue includes transmitting at least one burst of data packets, where each burst contains a plurality of data packets sufficient to maximize throughput.

27. The system of claim 25 further including storing a data packet in the queue if the actual arrival rate is less then the first threshold value, and scheduling a future interrupt event, wherein the occurrence of the future interrupt event causes processing of data packets from the queue.

28. The system of claim 25 further including comparing the actual arrival rate of data packets to a first threshold, wherein the actual arrival rate is based on a weighted average of time intervals between a predetermined number of previous data packets, and wherein the first threshold value corresponds to a predetermined arrival rate

29. The system of claim 28 further including transmitting a data packet without storing the data packet in the queue, if the actual arrival rate is greater then the first threshold value.

30. The system of claim 25 further including comparing the number of data packets to a second threshold, wherein the second threshold value represents a number of unprocessed data packets.